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ABSTRACT

A conference was held to discuss the new communications technologies, such as the Internet and the World Wide Web, and their effect on women's opportunities to learn. A paper on woman-centered learning in the digital universe and a discussion paper examining the pros and cons of introducing and using new technologies in educational programs for women were presented on the first day of the conference. The second day opened with a paper providing a gendered perspective on access issues. Workshops on the following topics were conducted during the afternoons of both days of the conference: community access; institutional access; quality of the learning experience; and opportunities for learning. The main issues that surfaced during the conference were summarized in a report titled "Conference Synthesis" (Linda Shohet), and 24 recommendations regarding access, opportunities, quality of learning, and impact of the new communication technologies on women's lives were formulated. (Appended are the two discussion papers: "Women-Centered Learning in the Digital Universe," by Heather Menzies, and "A Gendered Perspective on Access Issues," by Leslie Regan Shade. Also included are a 28-item list of print resources and websites and principles of accessible web page design.) (MN)

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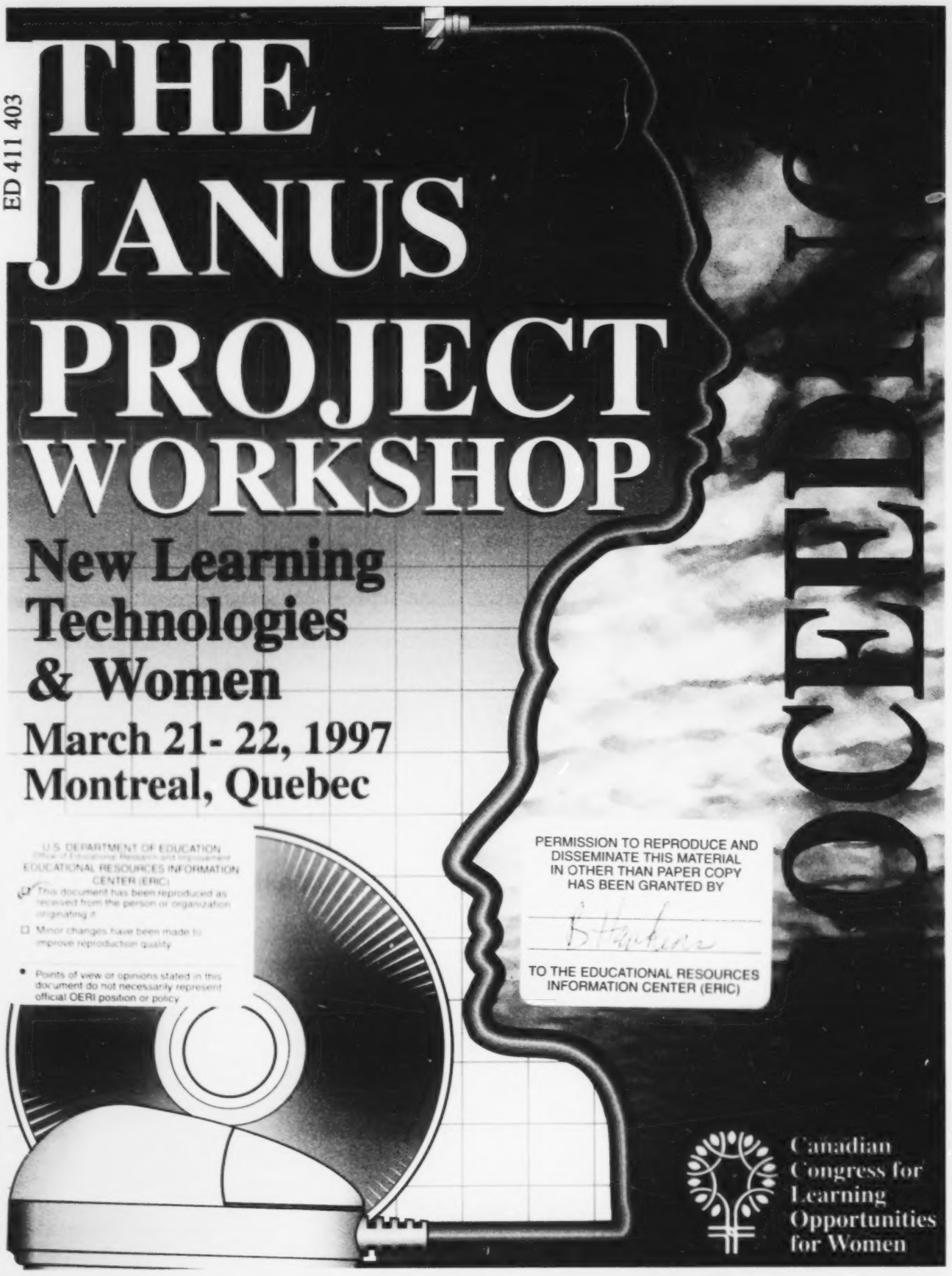
ED 411 403

THE JANUS PROJECT WORKSHOP

New Learning Technologies & Women

March 21- 22, 1997
Montreal, Quebec



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Canadian Congress for Learning Opportunities for Women

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CCLOW
Canadian Congress for Learning Opportunities for Women

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June 19, 1997

Dear Reader:

Enclosed you will find:

1. The proceedings of the Janus Project Workshop held on March 21-22, 1997 in Montreal, Quebec. The text of Heather Menzies's insightful and thought-provoking speech is included.
2. An additional resource list compiled by Liz Burge, President of the Canadian Association for Distance Education.
3. A discussion on accessible web page design submitted by workshop participant Maria Barile.

Our discussion paper *New Learning Technologies: Promises and Prospects for Women* is now available for sale. The cost is $14.95 plus postage and handling and GST. To order a copy please contact the office by phone or by fax. Our toll-free number is 1-800-858-7558. Please do not pre-pay, you will be invoiced.

We hope you find the enclosed information helpful in furthering your work on these important issues.

Sincerely,

Bernnitta Hawkins

Bernnitta Hawkins
Executive Director

CCLOW'S JANUS PROJECT

CONFERENCE PROCEEDINGS

The Janus Project: New Learning Technologies & Women

March 21-22, 1997
Hotel du Fort, Montreal, Canada

Proceedings prepared by
Christina Starr

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Introduction

In 1995, the Canadian Congress for Learning Opportunities for Women (CCLOW) developed a project to examine new communications technologies as they relate to women's learning. The project was funded in 1996 by the Office of Learning Technologies, Human Resources Development Canada.

The Janus project was conceived in two parts: the development of a discussion paper on issues surrounding new technologies and how they affect women's opportunities to learn, and a two-day conference to discuss the findings of the paper and identify areas for further work. This paper records the proceedings of the conference, held March 21-22, 1997 at the Hotel du Fort in Montreal.

Definition

For the purposes of this project, "new" technologies are electronic technologies used for enhanced communication and interaction. These include:

- technologies such as videoconferencing and audioconferencing which, although not "new," are being applied in new ways
- computer based technologies, such as electronic mail, computer conferencing
- technologies that provide access to information, such as the Internet and the World Wide Web

The primary focus of discussion throughout the conference was on new electronic technologies such as the Internet and the World Wide Web.

Friday, March 21, 1997

Friday Morning

The conference opened Friday morning at 9:00 a.m. with a Keynote address from Heather Menzies. Heather is a writer and activist based in Ottawa who has given considerable time and thought to issues raised by new technology and its impact on women's lives. The full text of Heather's speech is included in the appendix of this report.

Woman-Centred Learning in the Digital Universe

Heather's presentation focused on the ownership and development new technology and on what purposes technology serves. It is extremely important for women to question the uses of any human development, particularly if it is created by a homogeneous minority of the population. Using Marshall McLuhan's sexist phraseology, Heather warns of new technology becoming, literally, "the extension of *man*," and, by extension, the retraction of women.

Most advances in technology have been developed by men who are English speaking, of European descent, non-disabled, and whose interests lie primarily in the profit-making private sector. This has resulted, for example, in the creation of text-messaging software and communications technology that is English-dependent. Some languages, such as French, do not transmit well and others, such as those based on another alphabet, do not transmit at all. It has also meant the elimination of many service-related jobs traditionally held by women, such as telephone reception and banking services, or the transfer of such work into the home where workers are employed on contract, constantly monitored through their telephone or computer, responsible for their own overhead and insurance and offered no benefits. Women who work in these conditions find they have little reason to go out during the day or be concerned about their physical appearance. A result, Heather cautions, is the disappearance of women as social beings.

In a "globally networked digital universe," Heather identifies the digitization of work and learning which also allows for de-institutionalization. The "machine" is all around us, in wires that run through the walls and floors, telephone lines that surround our homes and workplaces, and in transmissions from satellite to satellite over our heads. Less and less do we need to be in the same place to take the same course or work for the same company; less and less is there a need for humans to be involved at all. Instead of being used to extend what people already do, machine intelligence is *replacing* human intelligence, human judgement and involvement.

Heather described two models of learning and education: an ecological model based on the living world and its processes of communication and growth, and a transmission model based on production and measurable results. Though new technology has so far served the production model to a much greater extent, it can also be employed in an ecological model where women's ways of learning, of connecting, networking and communicating, are respected. The challenge is to ensure access not just to participation but to meaningful participation, and to evaluate the quality of the communication accessed.

We in Canada have a history of government involvement in facilitating communication and community interaction: the CBC, the NFB, radio and telephone communications have all been heavily subsidized. It is essential that the public sector maintain a commitment to democratic participation in our culture and communications. The human and the technological must be appropriately balanced.

Heather closed with a dream of women and women's organizations, CCLOW especially, formed into an extra-parliamentary opposition and policy making body to ensure democratic involvement, human interaction, and the protection of our interests in the regulation and proliferation of new technologies.

Questions

A participant raised the issue of knowledge and learning becoming quickly obsolete with the constant introduction of new and upgraded software programs and hardware. Heather cautioned that though rapidly changing software and hardware can be intimidating, the basic knowledge required to run a computer or to use software does not change from machine to machine or program to program. Perhaps what women need is the confidence to know they *can* learn and manipulate the technology, as well as some resources to bridge the gap between older technologies and applications and newer ones.

Presentation of Paper: Jennifer O'Rourke, Linda Shachter

Linda and Jennifer co-authored the discussion paper which was the first step in this project. They presented their findings as a starting point for small group discussions to take place in the afternoon. The main areas covered in the paper are: Community Access, Institutional Access, Costs and Use of Resources, Opportunities for Learning, and Tools and Strategies.

The approach behind the paper is to identify the pros and cons of the use and introduction of new technologies. This is done by mapping out the necessary connections, supports and cost requirements of new technologies and examining, on that terrain, what areas may get overlooked or bypassed and what may be opened up.

A number of barriers stand in the way of the use of new technologies, from an individual to an institutional and national level. The costs for programs, equipment and connections are, on the whole, more expensive and also require a cost outlay if adequate equipment and programs are not already in place. Costs on an individual level include the purchase of a computer, modem, Internet software, connection to an Internet Service Provider and, in many cases, a separate telephone line. Costs at an institutional level can include the same list as well as the purchase or development of programs for delivery and staff time and training necessary to support new programs. At a national level, costs include the provision of single line telephone service, greater bandwidth service and satellite connections across the country.

Other barriers include geography (there tends to be less service in remote or rural areas), gender (women have less access than men), ability (appropriate software or equipment is often not available or is too expensive), skill or education level, and language (new technologies are primarily English-dependent).

Linda and Jennifer proposed that the cost or acquisition of new technologies be examined in light of what women are willing to give up. It was agreed that there are many things we would give up, such as the costs that would be eliminated with the elimination of violence against women, but that those who make decisions were unlikely to balance costs in that way.

It was raised that there are national jurisdictional issues that impede universal access in Canada. There are "have" and "have not" provinces and regions, and responsibility for communications lines is national while responsibility for education is provincial. As well, Quebec is the least computerized province in part because of the language barrier and in part because of its cultural and political distinction from the rest of Canada.

A number of examples are presented in the paper where women's opportunities to learn have been enhanced by new technology. Women have been able to communicate with each other quickly and efficiently and across vast areas. They have developed a kind of "network activism" that can galvanize an immediate and widespread response to an issue. A network that has been formed using new communications technology is the Sunshine Coast Women's Centre in British Columbia. Equipment and access to the Internet are provided at the Centre free of charge and connections have been established with women in remote and rural areas of Northern B.C.

Friday Afternoon

In the afternoon, participants divided into four workshops: Community Access, Institutional Access, Quality of Learning and Opportunities for Learning. Workshop facilitators for the sessions were, respectively: Jo Sutton, Linda Shohet, Pat Webb and Cheryl Senecal.

Community Access (facilitated by Jo Sutton)
Discussion in this workshop focused on defining the parameters of community and the barriers to access related to various communities. Barriers were identified for those outside large urban areas, those unconnected with institutions, those who do not have fluency in English, those who have disabilities and those whose most pressing concerns (immigration, employment, childcare) are far removed from accessing the Internet or learning new technologies. For some, particularly for women with disabilities, access and use of the Internet is still a futuristic scenario.

Other barriers include: learning styles (new technologies do not necessarily incorporate a variety of learning styles); inappropriate or offensive content of software, course materials or information available electronically; men's or boys' dominance of technologies or computers in a classroom, work setting or domestic relationship; and the lack of interest at the government level in addressing women's concerns.

However, the potential of new technologies was recognized. Technologies such as the Internet and the World Wide Web may be fashioned to women's ways of learning more comfortably than previous uses of the computer. As well, in very remote or rural areas, or in farm-based and other economies where people

live and work at home, the Internet or distance learning technology may provide the only opportunity possible.

Technology can also positively affect a community. In one case, a community of otherwise unconnected women was created by first giving them access to the Internet through which they contacted each other; in another, women were notified of a university lecture on a topic closely related to their work, of which they otherwise would not have been informed.

Areas of most concern identified by this workshop are:

- that technology is not accessible to all women in all communities; barriers include cost, geography, lack of adaptations, lack of sufficient telephone service, language

- many communities lack the strategies and resources to ensure meaningful and relevant participation; such resources would include assessment tools, leadership, technical expertise, awareness of gender issues, awareness of disability issues and needs, and awareness of health and safety issues.

Possible solutions are:

- finding ways to assist communities to assess their need for technology

- developing tools to help communities critically assess the impact of technology

- supporting women into leadership roles in their communities to affect decisions about where and what kind of technology will be introduced

- lobbying government, particularly Industry Canada, to have women's access issues recognized and addressed

Institutional Access (facilitated by Linda Shohet)
Discussion focused on women's participation in the industry of new technologies: in decision making about who is re/trained to use technology; loss of jobs or loss of authority as a result of the encroachment of technologies; participation in the software industry that produces games and learning packages (compared to the participation of women in trades); use of computers primarily for clerical or service-oriented work.

Institutional departments to which technologies are first introduced are often the male dominated ones of math and sciences; the rationale for introducing technology is often administrative or related to record keeping rather than to pedagogy which means educational procedures and strategies have to adapt. The impact on education, and on adapting educational techniques so that women and girls are not left behind in learning technological skills, has implications also for teacher training.

Discussion focused also on strategies to increase women's access through institutions. For example, lobbying the government to set up financial incentives to technical colleges or university programs to graduate a quota of women in technology fields, or to provide grants to women's organizations for purchase and set up of Internet technology; creating high profile "awards" for the best and worst records of an institution or corporation in retraining women in areas related to technology or in other areas where their work has been eliminated because of technology.

Positive and negative effects of an institution's adoption of technology were expressed. A small activist-based organization in Toronto has grown into a national organization that provides daily updated information from international sources on HIV and AIDS treatment. Others expressed fears that as universities are under pressure to provide practical skills, including technological skills, liberal arts and humanities-based education will suffer.

Areas of most concern identified by this workshop are:

- lobbying various sectors to increase women's entry into fields of new technology (premiums for admitting women into programs, bursaries for individual women, tax breaks for hiring women or taking on female co-op students)

- continuing research into gender, learning and technology

- sharing information and examples to help women's organizations advance through the use of technology (eg. STEMNET (Science, Technology, Engineering, Math Network), HIV information sharing network, TD Bank retraining of displaced clerical workers

Quality of the Learning Experience (facilitated by Pat Webb)
This workshop group identified elements of successful learning to use as evaluative measures for learning with new technologies. Such elements include: learning within a community, content that is relevant to the lives of students, passionate teachers, respect for individual learners, active participation, a safe environment, learning from role models, having resources and time (to learn on one's own), pleasure and desire in learning, and the opportunity to discover knowledge or information.

Some technologies provide some of these elements. Email can be used to build community, even to circumvent "regular" channels of communication to make contact with those interested in similar issues or research; email also facilitates the participation of learners who may not otherwise speak up in a group, and contact between these learners and the instructor. Students can divide themselves up into study or "chat" groups on the Internet, and can allow for safety and confidentiality by making their groups private. However, technology can also jeopardize the safety and confidentiality of learning (eg. in Women's Studies) by requiring the presence of technicians or the possibility of others "listening in." The caution against "technology for technology's sake" was raised, as was the statement that technology is just the tool and not the end itself.

Concerns were raised about being able to create, or maintain, a feminist learning environment to which the content of software and the design of programs are relevant. Feminist educators or learners need tools of assessment (the sharing of stories) to evaluate the uses and applications of technologies. There is a need to train women in technological skills and uses so that a) they can assess what technology is appropriate to their needs and b) they can have control over the use of technology, its design and content.

Most significant actions identified by this workshop are to:

- develop visions of a woman-friendly learning environment on which to base evaluation of learning technologies

- resist the privatization and commodification of learning by analysing and publicizing the trends and by sharing women's stories of positive learning experiences

- legitimize women's experiences of using learning technologies in a form that can affect public policy

- train women to be informed users and skilled designers and manipulators of technology

- keep track of how technology is being used, by whom and for what purpose

Opportunities for Learning (facilitated by Cheryl Senecal)
Issues addressed in this workshop ranged from the difficulty in distinguishing between "opportunity" and "access," to discussing disparities in opportunity, to recounting positive learning opportunities that employed new technologies.

Disparities in learning opportunities were identified as existing from province to province and region to region, and as a result of factors such as class, language, learning style, etc. Possible uses or opportunities presented by new technologies have not been guided by cohesive policies or principles with respect to women's needs or in relation to an educational agenda, but have been primarily corporate-driven.

Examples of positive learning opportunities included: providing university level courses to women in an isolated community in northern Alberta through video conferencing (though lack of facility in academic English was overlooked); a literacy practitioner training project through teleconferencing in which students were divided into learning circles; courses through the Virtual University (American) in which "study groups" were used; a computer lab in which students bonded through discussing the social implications of new technology and through teaching each other; and uses of technology to bridge distance and connect remote locations in Canada, South Africa, and globally connecting women across North/South regions.

Unevenness in opportunities available to people with disabilities was cited; in some cases equipment, hardware and software are generously provided and in others they are completely lacking or inappropriate.

It was agreed that, regardless of technology, the fundamental elements of a valuable learning experience remain constant and are recognized intuitively, experientially, rather than through measured or statistical outcomes.

The most important issues identified by this workshop are:

- the disparity in learning opportunities depending on location, language, learning style, age, ability, gender and class

- the need for a cohesive policy developed by women to direct the introduction and uses of new technologies and for this policy to be on the agendas of policy makers, educational institutions and the private sector

- a way for women to critically assess uses and feed reflections back into the process

- the importance of human interaction and connection in creating valuable, positive learning experiences, and the value in meeting personally and not only on-line

- the need to open up opportunities to young women and to address the implications of "accidental collisions" with pornography on the Internet when attempting to research "women" or "girls"

- the need for a clearing house of information and support for women using technology

Saturday, March 22, 1997

Saturday Morning

Saturday morning opened with an address by Leslie Regan Shade. Leslie is a consultant on social and policy issues related to the Internet, including the issue of women and gender. Based in Ottawa, Ontario, she is also a Ph.D. candidate in Communications at McGill University. The purpose of Leslie's paper was to present a feminist analysis of new learning technologies including issues related to universal access and gender.

A Gendered Perspective on Access Issues

Leslie's paper opened with an image of "Hacker Barbie," an imitation Barbie that appeared on the Web after Mattel's 1993 release of a talking Barbie who said "Math is hard." Hacker Barbie is dressed in worn-out jeans and a button up shirt, wearing thick glasses and seated in front of her own computer. This image demonstrates the subversive potential of the Internet but reminded that this subversion is in response to male domination of the Internet terrain and to the still prevailing myth that computers (math, science) are

unnatural to women.

Leslie noted that universal access to basic network services is a key preoccupation of public policy makers. An Information Highway Advisory Council (IHAC) was set up by the federal government to examine and report on issues of access. Though social issues such as equity, democratic participation and social justice were not seriously considered by the Council, the federal government has made a commitment to ensuring universal access, including access with respect to gender.

Leslie suggested that access to telephone service be used as a comparison for access to network service, in that a vital public sphere is maintained, the tradition of communication as a public good is continued, and that universal access is considered an essential human right. Inequities in access to the Information Highway have been found based on education, class, gender, visible minority status, ability, language, geography, etc. But information on access and computer ownership is rarely analysed by gender.

There is very little social facilitation for women's and girls' approach to computers or the information highway. Ensuring women's access to the Internet means ensuring physical accessibility (easily available terminals and Internet connections) and designing technologies that are sensitive to women's knowledge and experiences. For example, security and privacy would have to be ensured given that many women's groups deal with issues of a sensitive nature.

Questions arise about how increasing technologization affects women's lives: Are women losing jobs in the service sectors (banks, libraries)? Are more women forced to work at home with no benefits, no employment standards and little social interaction? Will information technology jobs become pink collar ghettoes? Leslie has noticed a trend in advertising, the media and some commercial applications towards the domestication of technology. She compares this trend to the introduction of the television in the post-war era as a "window onto the world," where the technology becomes the new "family hearth."

Leslie's paper ended with several recommendations and questions for further discussion that grew largely out of a workshop on Universal Access to Essential Network Services held at the University of Toronto in February of 1997. The workshop included representatives from government, business, labour, academia and public interest groups including women's groups. The questions/recommendations, included in the appendix to this report, address how universal access and appropriate content could be achieved and secured through various regulatory measures.

The Quality of the Learning Experience

A panel discussion on the Quality of the Learning Experience followed the delivery of Leslie's paper. Presenters provided viewpoints from three perspectives: the learner (Miriam Ticoll), the educator (Mavis Bird) and the private sector (Vasso Vahlas).

The Learner

Miriam Ticoll presented her experience of having enrolled in and completed a course about the Internet entirely on the Internet. Though there was a "class" and an instructor, there were no organized face to face

meetings between any of these people at any time during the course. This produced a sense of "disembodiment," a suspension of the usual social ways of attaching meaning and assumptions to a person's appearance, age and (because names are not necessarily gender-specific) gender. This "invisibility" opened up possibilities of equal participation through the absence of judgement based on appearance, age, ability, sexual orientation and (in some cases) gender.

However, it is difficult to say whether such a situation produces enough "liberation" for women to overcome socialized habits of less participation and less claim to authority. As well, Miriam questioned whether this kind of communication is able to provide women with opportunities to practice the interpersonal skills they have been socialized to hone and whether an essential element in most human experience is human contact.

The option of 24 hour access to class discussion and course time was initially seen by Miriam as allowing flexible and less fixed participation. However, the possibility of contributing to class discussion or course work at any time of the day or night became all-consuming and stressful. While this flexibility and, in particular, not having to attend classes, can provide advantages for those in remote locations or those who have mobility impairments, this situation can also introduce additional stress to women's lives by lengthening the work day and by providing no clear delineation between study time, work time and domestic responsibilities.

In conclusion, Miriam noted that our understanding of new technologies is, to date, based on a very narrow band of people, most of whom have stable incomes and a high level of formal education. The Roeher Institute (a National Institute for the Study of Public Policy Affecting Persons with an Intellectual Impairment and Other Disabilities) is initiating a project to train people with intellectual disabilities on uses of the Internet, and it is hoped that further explorations of new technologies will include considerations for women who have been labelled intellectually disabled.

The Educator

Mavis Bird's paper focused on the introduction of technology into teaching methods, and noted that though utilisation of technology in education is usually well behind what is commercially available, this is an appropriate situation. Committing a system to unsuitable technology is, at least, wasteful of resources and, at worst, disastrous for students and instructors alike. Too quick an introduction is sometimes made by decision makers, who are seldom prime users of new technology. Rarely do such decision makers consider that "if technology is the answer, what was the question?" Certainly the question has never been "What can be done to increase women's access to quality education while ensuring their preferred methods of learning are maintained?"

Instructors often have technology foisted upon them and are required to incorporate it into their teaching practices before the "problem" has been identified to which technology is the solution. Men tend to want to use technology and master it because it exists whereas women will identify a problem and become expert users of a technology where it is of assistance to them. But the education system seldom allows teachers the opportunity, time or training to experiment with computers, software and telecommunications gear. The

quality of education is limited by the teacher's capacity to utilise technology to its best advantage.

Information technologies do hold potential to improve the quality of education and to support women's educational processes. The person who provides the key to channelling technologies appropriately and guarding against potential alienation from the learning experience is the teacher. The push of the commercial sector to develop technologies is providing the infrastructure, the information resources and the interactive capacity at more and more affordable prices. It is up to the teacher to ensure that such tools are utilised in a way to provide a quality educational experience.

The Private Sector

The corporate agenda is one of dollars and cost; social issues are rarely considered. The introduction and use of technologies is considered in light of what they cost and/or of what costs they will save. The concomitant issues of job loss and for whom, of who will have access to and training in the new technologies, who has designed them and what is the content are not priorities. Vasso used her own experience as a member of the Board of Directors of the Insurance Corporation of British Columbia to demonstrate how even corporate environments that are progressive can be contaminated by conservative approaches to doing business. Those who are aware of social issues, of the uneven impact of new technologies, and who are involved in the corporate sector must be vigilant and persistent in forcing attention to such issues.

Vasso suggests that, in the current corporate takeover of many aspects of our lives and the dominance of conservative right-wing politics, we need to return to the radical and active tactics of the political movements of twenty to thirty years ago. Women need to resist the encroachment of male technologies and male motivations into our lives, and use revolutionary tactics to demand not only equal access to and benefit from technologies, but also access to content and information that is supportive, appropriate and unopressive.

Questions

Issues raised in the question period were directed at all three panellists. In response to Vasso's suggestion that women initiate a greater protest, some participants felt that thirty years ago it was easier to effect change. With the current losses and reactionary environment, women are discouraged today about whether change is possible. A suggestion was made to make use of current networks that are already set up, such as through the Canadian Labour Force Development Board, the Canadian Association of Distance Educators, the Canadian Association of University Continuing Educators, etc.

There was mixed response to Miriam's experience of invisible identity on the Internet. Some felt positive about the ability to claim more authority and more "voice" when not identified by age, gender, ability, ethnicity or sexual orientation, but others felt this to be a form of "passing" and that not much is gained if women's claim to authority is predicated on not being identified as female, of colour, lesbian or with disabilities.

In terms of individual access, another participant spoke about the funding support available to people with

disabilities. Her daughter, who is blind, has been able to purchase sophisticated computer equipment appropriate to her needs and uses. However, not all people with disabilities fit the criteria to access such funding or they can be constrained by the terms of the funding or the equipment approved for purchase.

Saturday Afternoon

Participants again divided into four workshops, led by the same facilitators: Community Access, Institutional Access, Quality of Learning and Opportunities for Learning.

Community Access(facilitated by Jo Sutton)
Susan Bazilli used the report back time to inform the group that the Women's Program, of Status of Women Canada, has agreed to fund a planning meeting for women interested in organizing a national conference of women involved in new technologies. Women interested in attending this planning meeting, which will be held in May, should contact Susan Bazilli or Jo Sutton.

A defined need that could come out of such a conference is for a national, cohesive position on technological access for women, something similar to the Beijing Platform for Action. Such a position could be presented to government and other funders to influence policy and decisions regarding new technologies. In order for such a position to be comprehensive, alliances would have to be developed between women's groups and with women individually in order to include all perspectives. This CCLOW conference has, so far, been the best opportunity for women across the country interested in technologies to get together and discuss issues and possible solutions. Further face-to-face meetings are essential.

Institutional Access (facilitated by Linda Shohet)
In this workshop, ways of influencing decisions and access at institutional levels were discussed. These included: lobbying, sharing information and networking in communities to have a stronger voice, raising awareness among young women of the importance of feminism, having women in privileged positions (those within institutions) pay attention to the needs of those who are marginalized. Different ways to conceptualize the dynamics of power in order to shift it were also discussed. Some of this focused on the metaphors that are used to describe various social, cultural, institutional activities and how these reflect a particular (usually male) way of engaging with the world.

Time restraint, and the corporate, institutional or political rush to achieve certain ends, was identified as a significant barrier to providing appropriate and meaningful access.

Degrees of privilege, "haves" and "have nots," were discussed in that access is often denied or restricted for those with less privilege; an institution or the government may provide access for marginalized populations but with limitations on how or when or for what purpose. Suspicion between community groups and academia was raised, in that community groups do not want to be co-opted by the academic world, and institutions are seen as protecting their turf especially with respect to funding.

As a fundraising idea, a "millennium project" was proposed that would link countries around the world on issues of women and technology.

The most significant issues raised in this workshop were:

- diversity, ensuring that institutional access is available and relevant to all women

- lobbying or pressuring institutions for women's access and involvement

- community involvement, ensuring that institutions do not set the agenda or identify needs for various communities

- that women's achievements and pioneering in various areas of technology are documented and shared to provide models and inspiration to those new to the field and to record what's been accomplished

Quality of the Learning Experience (facilitated by Pat Webb)
As with Friday's workshop, this group attempted to define what, for women, gave quality to a learning experience. Similar elements to Friday's discussion were named: having learning appropriate to one's needs or goals, being able to practically apply learning (to one's own life or work), having role models and passionate teachers, having time and resources to learn, time to reflect on knowledge one already has, diversity of opportunity and mode of learning, fun in learning, and learning in a community.

With respect to new technologies, the quality of learning is influenced by those who design new equipment and software. To date, not many educators (or women) have been involved in the design of technologies or programs utilised in education. The question is whether corporations such as Disney or individuals such as Bill Gates, or those who are graphic designers, become the teachers if they are in control of the technologies and software used in learning.

The production of technologies and upgrades is corporate-driven, not coming from consumers. Strategies were suggested of how to utilize the power of consumers to influence what is produced: lobbying, boycotts, creating an alternative product. Established women's groups, CCLOW included, should outreach more to women and other groups to form a stronger network.

Most important issues were:

- a method of evaluating the quality of the learning experience irrespective of the use of technology, and feeding that evaluation back into the educational process

- ensuring women's and educators' input into the design of technologies, programs, and software

- establishing a strong network and effective strategies to influence the production and uses of technologies (both politically and in the corporate world)

- avoiding the "razzle dazzle" of technologies if the content and the quality of education is sacrificed

Opportunities for Learning (facilitated by Cheryl Senecal)
Technologies can increase learning opportunities and the numbers of people participating in learning but they have to be provided in a friendly and appropriate way. Video-conferencing, though expensive, connects learners to other learners or to their instructor in a visual way which is comfortable and familiar. Audio conferencing is less expensive and resembles a telephone conversation but with a number of people. An example was raised of courses conducted through radio where listeners tune in every week at a specified time. Uses of "new" technologies should not preclude effective "older" technologies especially if they are less expensive.

A significant aspect of women's access to opportunities is the participation of other women. Women who might not approach or learn about new technologies because of socialization, fear, uncertainty, or suspicion, may do so if the link between themselves and the technology is another woman. The mentoring of women/girls new to technology by women/girls more experienced in the field, regardless of age, should be recognized and encouraged.

Opportunities for flexible work arrangements was mentioned in being able to work at home, during convenient hours, and still be connected through phone, fax, email, to the working environment. Opportunities for learning sensitive or risky skills through virtual programs was also mentioned, as in interns or dentists learning how to give a needle or drill a tooth without risk to an actual patient. Some participants warned that technology does not provide a new opportunity if it is badly used (eg. educational TV shows).

The most important issues from this workshop are:

- not forgetting about opportunities provided by "older," more cost effective technologies

- involving women, including or especially young women, in the process of introducing women to technology

- using technology to bridge distances & to provide information to those in remote locations (eg. farmers) but being vigilant that such uses build community rather than destroy it (by leaving some people out)

- that using technology does not eliminate creativity and personal expression

Conference Synthesis by Linda Shohet

In the last half hour of the conference, Linda Shohet (CCLOW Quebec Director and member of the Janus Project Working Group) provided a summary of the main issues that had surfaced.

Common to most discussions was a need to change the metaphors used to speak and think about technologies. Linda related an anecdote in which she compared the use of language to the construction of bridges and that, in some cases, bridges had been constructed by one class or group of people in order to *prevent* use of them by other classes or groups of people. It is important for women to move away from militaristic, "delivery" metaphors about education and technology and towards language that respects wholeness, inclusiveness and interaction. The symbols and images of women's daily lives could also be incorporated into the development of software programs so that, for example, the icons representing various functions could be familiar and comfortable to women.

The importance of a values analysis with respect to new technologies and the purposes they serve was prevalent. Such an analysis includes considering what opportunities might be lost, as well as gained, through the introduction of new technologies and what social costs may result. The actual cost itself of new technology was raised, and considered in light of the barriers it creates particularly if borne primarily by individuals (unsubsidized by institutions, government or the private sector).

The centrality of teachers to the learning process was also an important theme, particularly with respect to the potential alienation and "disembodiment" of new technologies. A teacher/instructor can serve as the human mediator between student and technology and can keep the learning process grounded in exchange, interaction, discussion and personal contact. An instructor also holds the potential to direct the uses of technology in the learning environment and to shape such use so that it is appropriate to the learners and the subject of learning. It was also recognized that a teacher can be anybody who has significant experience and familiarity with the technology, whether she be a senior woman or a twelve-year-old girl.

Finally, this conference represents the interest and enthusiasm of a large number of women who are either already using or are interested in knowing more about new technologies. Women recognize the potential of new technologies to connect with each other, to learn, to access a tremendous amount of information and to organize politically. But we do not want to use technology that is inappropriate or demeaning, nor do we want to be shut out from exploring women's potential uses of new technology. All around us technology is buzzing, being developed and created with no thought to women's concerns nor to the social justice issues faced by those marginalized in our society. However, it is possible for women to have input, to claim and appropriate technology and its equipment as we would appropriate a toy from a child who is using it to hurt. The possibility, both potential and realized, is that technology developed and directed by primarily male, corporate and government interests will marginalize, oppress and exclude women. However, with necessary support and recognition of the issues, the possibility also exists for women to have a strong and contributing presence in the development and uses of new technologies and that women's access to education, to opportunities to learn, and the quality of their learning experience will be greatly enhanced.

Recommendations

These recommendations are culled from the text of these proceedings, from the issues identified in the workshop discussions, and from the texts of the papers presented. They have been loosely grouped into four categories: Access, Opportunities, Quality of Learning and Impact on Women's Lives.

Access

1. Development of resources to help women to bridge gaps between older technologies and applications and newer ones

2. Training for women to be informed users of technology

3. Supporting women into leadership roles in their communities to affect decisions about where and what kind of technology is introduced

4. Lobbying government, particularly Industry Canada, to have women's access issues recognized and addressed

5. Lobbying various sectors to increase women's entry into fields of new technology (premiums for admitting women into programs, bursaries for individual women, tax breaks for hiring women or taking on female co-op students)

6. Establishment of a national clearing house of information and support for women using technology

7. Documentation and exploration of the needs of women most marginalized, including women with disabilities, young women, poor women, immigrant women and women of colour

8. Lobbying of institutions to increase women's access and involvement in areas related to technology, including decision making, programs, and use of on-site equipment

9. Documentation of women's achievements and pioneering in various areas of technology to provide models and inspiration to those new to the field and to record what has been accomplished

10. Establishment of a strong network and effective strategies to influence the production and uses of technologies in both the public and private sectors

Opportunities

1. Assisting communities to assess their need for technology and to critically assess the impact of technology

2. Collecting stories and sharing information and examples to help women's organizations advance through the use of technology

3. Involving women, including or especially young women, in the process of introducing women to technology

4. Establishment of criteria for evaluating opportunities provided by new technologies with those provided by older technologies

Quality of Learning

1. Development of evaluation measures for learning technologies through establishing criteria for successful learning and woman-friendly learning environments

2. Through consultation, lobbying, information sharing, and training for women, ensuring women's and educators' input into the design of technologies, programs and software

3. Developing evaluative strategies for the content of programs and software, to identify inaccurate or injurious information, or offensive content

4. Ensuring that uses of technology for learning do not eliminate creativity and personal expression

Impact on Women's Lives

1. Sharing information about the privatization and commodification of learning in order to resist such trends

2. Organization of further face to face meetings of women to discuss and network on issues relevant to technology

3. Ensuring community involvement in institutional decision making related to community uses and access of technology

4. Establishment of procedures by which technology is used to bridge distances and strengthen, rather than divide, communities

5. Taking a more active role as women's organizations, CCLOW included, in policy making and creating initiatives.

6. Creating strong networks between women's and educational/learning organizations to present a cohesive front on issues related to technology and to take leadership in addressing issues, creating solutions and promoting opportunities.

Women-Centred Learning in the Digital Universe

by

Heather Menzies

Montreal, March, 21, 1997

Fifteen years ago, Pat Webb and I participated in what was perhaps the first national women's conference focusing on computerization and its effects on women's work. It was jointly organized by CCLOW, CRIAW, NAC and the Cdn. Federation of University Women. We came together to get our bearings on what we needed to do and think about in the face of what seemed to be a major social transformation.

Similarly today, we've gathered to get our bearings on what we need to do and think about. On the one hand we have a lot of desperate people looking for new skills for the new economy, wanting to upgrade educational credentials, and needing technology-assessment tools to avoid being ripped off.

On the other, we have the increasingly digital and multi-media context in which training and learning is being developed and offered -- often by package-deal information-systems and service providers.

The question is, how do we respond as critical insiders?

What do we want to guard against? And, what do we as women sticking up for other women want for ourselves? What technologies, and more importantly, what relations between people and technology do we want?

One way we can move toward appropriate choices and uses of new learning technologies is by having a clear sense of the kind of communication that underpins effective women's learning. I'd suggest that it's the kind of comm. that went into this conference: a lot of personal chatting by phone, fax and email, knitting together ideas, looping back and forth.

I picture it as something of a spiral – plus the lazy meanderings of a long-established river, with its oxbows representing the moments where the past doubles back to the present, to renew it. But equally, we need to realize that a very different model of communication is reasserting its dominance in the transformation of our society into the globally networked digital universe. Picture it as the box-car approach to communication and education. It's communication as production and transmission: a series of multiple-choice boxes, with an engineer up front going as fast as possible.

This doesn't bode well for the culture of education, or for women. McLuhan's description of the new media as the "extensions of man" could prove to be prophetic. They could serve primarily as the extensions of men, and of only some men at that. If we're not careful the new digital networks could become not the "extensions of women" but the "retractions" of women instead.

Okay. First, I want to spend a minute sketching in the larger context of restructuring, digitization and the new digital economy, out of which both the skill requirements and the new learning technologies are emerging these days.

In a nutshell, what's happening is that national machine-based economies are being restructured into a global systems economy.

Two elements here: 1) digitization: Much of the information underpinning work and the management of work in the industrial economy is being digitized. Transformed into the dynamic state of electronic bits. The second thing to understand is that this digitization/computerization is now in its third phase: the networking phase where all kinds of automated production modules, information sub-systems plus related electronic files can be linked together both within institutions and between them, creating the network of inter-connecting networks called the information highway.

Networks and digitization are the key to the transformation going on with restructuring: making it possible to de-institutionalize all kinds of work, to contract it out through a new global and local div. of

labour constituted through at-home teleworkers and call centres, through remote agile factories and workshops, through the networked organizational structures of virtual corporations and virtual colleges and universities and other institutions of training and learning.

I.E. the machine no longer on desk in front of us. It;s as much in the lines and connecting switches running behind walls, under floors, and between satellites high in space.

The machine is now all around us. We live in the machine: a very smart programmable machine, capable of programming us.

And it's capable of pulling the plug on our own ability to run our lives, our schools and other social institutions in ways that lie outside these systems of management and social organization, outside their logic and systemic priorities.

That's why it's vital to grasp what McLuhan meant by the phrase "the medium is the message." It means that the structures of comm. strongly determine what can and cannot be said, done, heard... New media create new environments, he said.

The global networks are becoming the new environment for work and for getting work. Also for shopping, banking and even going to the movies and getting an education. They represent a new meta-institution in which de-institutionalized, contracted out work is re-constituted, re-institutionalized through shared electronic files and access protocols. It's the new context for taking care of business in a widening variety of ways. The new site for schmoozing for contacts and bidding on contracts.

Another message of this new medium, then, is that if you're not plugged into this new environment, you're out of it.

A third message is that if you can't keep up with its performance standards, you're out of it too. By this I mean a global scale of operation, a multi-product, multi-media scope of production and distribution, plus rapid-fire turnaround and turnover through instant global connectivity. These are the new standards of competition. Speed is a big part of it -- and key to the demise of some of the national retail chains, like Woolco and Eaton's we've seen recently. In part they were bulldozed under by Walmart which is the 4th. biggest user of comm. tech. in the U.S. Instant connectivity for just-in time inventories and "quick-response retailing," augmented by teleshopping and 24-hour delivery by UPS. I predict that these new standards are soon going to start affecting the economy of education, especially in this era of deregulation, privatization and free trade.

A fourth message of this new medium is that it's a corporate environment. It's being built, run and managed by corporate information systems and service providers. Globe-spanning corporations like Time-Warner, General Electric and Microsoft, accountable not to citizens and democratic principles but to shareholders and to corporate or corporatist principles. If this becomes the context in which learning is defined and managed, whether it's brought to us by Disney or MacDonald's, or by Microsoft or Stentor is quite secondary.

Essentially then, we're dealing with a huge invisible perpetual motion machine extending into all areas of our lives as people in communities. As it does this, it's driving more and more people to the point of burnout, and leaving more and more people behind.

The contradictions are beginning to surface. The burning incident in Nova Scotia. Street demonstrations in Germany. Public anger at Helmut Kohl, despite his having engineered the miracle of ec. growth in a united Germany. it's a jobless ec. growth -- just like here. Unemployment rate is over 12 per cent, and the citizens of Germany are angry. Angry at finding themselves outcasts in their own economy.

Displaced from their own society. DPs. Historically, D.P.s have been an unintentional consequence of war. Here, the unintentionality is not nearly as clear.

Not because of tech. or restructuring as such.

Want to stress this. Tech. is a social constr. and it can be designed, managed and used so as to extend the scope of what people do. But that's only happening for a minority of people -- the new elite of "knowledge workers." In far too many institutions, private and public. technology is not being used to extend what people are doing, but to replace them, and to diminish and control what they do.

That's why there's so much unemployment and underemployment, and why 40 per cent of Cdn. describe themselves as economically distressed. That's also why a good education and hard work will no longer guarantee people meaningful stable work these days. Just recently, there was the case of 2,500 people lining up for a chance to apply for a possible 150 jobs in a big grocery store outside Ottawa, and of 4,000 people applying for the same number of jobs in Montreal.

Machines are replacing people; machine intelligence is replacing human intelligence, judgement and involvement.

3 major trends. 1) more and more goods and services are being produced with a minimum of human involvement. i.e. jobless ec. growth.

2. computer-simplification of work..This is turning good jobs into bad jobs. Full time jobs replaced by part-time mcJobs or short-term contracts because system does most of the thinking, organizing, supervising...This is a big blow to women in senior clerical, administration and middle-management as these jobs are being decimated. Not surprisingly, the wage gap is beginning to widen again. (It would be wider still but for the fact that young men's earnings have dropped so precipitously.)

3) Computer simplification of work is also permitting the increasing digital delivery of services and service-support to material goods. Here, computer simplified work is shifted from the paid hands of workers to the unpaid hands of consumers – who then push-button their way through a computerized voice-clip maze to serve themselves in a torrent of new areas of so-called customer-service. The effect here is more jobless ec. growth plus more mcJobs in a two-tiered labour force.

But there's more to this than numbers. We're moving away from an inclusive society of universal standards and universal services toward a society of deepening polarizations. Between over-worked rich, and the barely working or out of work poor, which could intensify into a political one: between the righteous rich and the resentful poor.

Equally there's a technology gap: between those with home-computers and modems and those without -- i.e. the technologically enfranchised from the tech. disenfranchised... Similar disparities in the relations with tech.: Between .those who work with these powerful new information systems, and those who merely work for them, and are controlled by them.

There is a strong gender element in these polarizations, with women disproportionately concentrated at the losing end, on any measure from income to technology have or have-not status. My friend and communication scholar Ellen Balka's research on women's groups and their access to computers, modems and the Internet has documented some troubling disparities between the more professional and grassroots elements of the women's movement. Women are not only losing a lot of the middle-management, clerical and administrative plus skilled manufacturing and service jobs they'd been getting in recent decades. They're concentrated in the occupations most likely to be strongly affected by the move to telework. Not only are call centres growing by leaps and bounds – over 5,000 in Ont. alone.

But work being transferred into the home, where workers shoulder overhead costs, maintenance, insurance etc.

1991 census documented a 40% increase in the nos. of people reporting the home as their primary place of work. Among these, the three biggest occ. groups were clerical, sales and service, all three female job ghettos. Majority reported incomes of less than $20,000; a sizeable minority within that reported less than $10,000. That's not enough to support a life let alone a family.

Want to take a moment to bring this home as a woman's experience by talking about Carol Van Helvoort, who processes orders for Pizza Pizza pizzas from a computer and modem she rigged up in the bedroom of her one-bedroom apartment on the fringes of Metro Toronto.

It doesn't really bother her that the computer monitors everything she does. It bothers her more that what she does is so little worth monitoring. She talked about the inconvenience of having the family phone line taken over for 2 four-hour chunks of the day, as Pizza Pizza turns her home into a virtual workplace. She talked about how young mothers have had to get their kids to keep quiet. "But why should they? What does it do to family life?"

She also worried about women's increased vulnerability in abusive relationships, being trapped inside the home all the time.

And that's what bothered her the most: the loneliness and isolation – inside her silicon work cell. She used to do her hair all the time; now she doesn't bother. She used to do her nails, but now why bother? "You don't even bother getting dressed half the time," she told me. And I thought: how much she's disappeared as a social being.

So these are the trends: The extensions of man; the retractions of woman. High unemployment, under-employment, and work speed-up, polarization and the shift to more telework. These trends will likely intensify over the next 10 years, as the networking phase of restructuring proceeds, especially through the public sector.

Now, I'd like to switch focus from the general trends of digitization, globalization and restructuring to the particular trends in the educational sector. All along I've agreed with people like Linda McQuaig who've challenged the assumptions associated with the deficit-cutting cutbacks. We know that social spending is not resp. for the deficit. We know that if corporations paid their fair share of taxes -- and didn't get so many gov't hand-outs themselves, there wouldn't be a deficit. Etc. Etc.

It begs the question: why this continuing attack on the public sector? Because, I argue, it's been a convenient smokesscreen. Behind which the public sector can be softened up, restructured and "reformed" -- ready for takeover by the private sector. Again, digitization and networks are the key elements in the restructuring picture. Once files are digitized. Once software takes over the administration and management of more functions. Once work is fragmented into Mcjobs. And once everything is linked and wired together, more and more can be shifted inside the networks of the new economy. In education, this means that everything from the administration of student registration and records to the management of teaching-learning centres and even the delivery of teaching itself can be contracted out. . What had been automatically embedded in face-to-face social relationships and bricks and mortar institutions can now be fragmented into service packages or modules, and de-institutionalized. Privatized. Opened up to competitive bidding -- by international information systems and service providers who, thanks to NAFTA, have the same standing as local and national suppliers. Then parcelled out to sub-contractors. Imagine teleworkers in call centres putting together "customized" packages of computer-based and multi-media

learning materials and sending these to distance learners at universities and colleges served by such education/information-management companies.

Actually, I foresee the same kind of polarizations I talked about emerging in the general economy emerging here in education and learning. A move farther and farther away from universal standards and universal access in education toward a two-tiered ed. system, particularly at the post-secondary level: At the elite end, in the cultural formation of "knowledge workers," learners will get a lot of individualized tutoring attention, augmenting their cruising through Internet salons of privileged discussion and their use of high-end data-base search and analysis tools. Then, at the other end, dumbed-down digitally delivered learning: Disney-style learning packages marketed, distributed and combined into "customized learning experiences" through the kind of computerized voice-clip mazes we currently navigate to do a lot of personal business -- including course registration – today. In fact, this consonance between the polarizations in the economy and polarizations in preparatory education has already been noted in some recent research, including a 1992 report on computer use in U.S. schools which found that the rich schools had students doing multi-media with teacher-facilitators, and the poor schools had computers replacing teachers, and confining students to computerized drill work. "Instead of becoming instruments of reform, computers are reinforcing a two-tiered system of ed. for the rich and poor," the researchers concluded.[1]

In Whose Brave New World, I predicted that the global networks of the new digital economy would prompt a new wave of colonization, and that the territory targeted for colonization would be the public-sector institutions of health and ed. I sense this happening in the public-school system, and even in post-secondary eduction -- Acadia University being a telling example. I call it colonization because this captures the polarizing dynamic which eco-feminist Vandana Shiva highlights in the development process associated with colonization. In other words, it's both development and under-development. It's not just that the new digital media for eduction and learning are being developed as the latest, the with-it, media. It's that the traditional media and the people associated with them are being under-developed: becoming marginalized and left to atrophy.

With the cutbacks in public-educational funding plus centralization and other educational reforms introduced in its name, we're seeing the under-development of ed. as public service and as living culture embedded in local communities.

Turn the frame around, and these developments are also the stepping stones to a new development of education as a business.

And that, I would suggest is the larger context in which the discussion of this conference is taking place.

To repeat what I said at the outset: On the one hand we have a lot of desperate people wanting to upgrade educational credentials, and needing technology-assessment tools to avoid being ripped off.

On the other, we have the increasingly digital and multi-media corporate context in which training and learning is being developed and offered these days.

The question is, how do we respond as critical insiders?

What do we want to guard against? And what do we as women sticking up for other women want to push for?

In other words, resistance plus, as my friend and comm. scholar Lorna Roth puts it, persistence too, in terms of the enduring principles of woman-centred learning and the culture of education.

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This brings me back to the meandering spiral-motif of women's communication, versus the dominant box-car motif. The first is linked a lot to what we have traditionally understood as "the culture of education." The other is linked to the business of education.

I'd like you to bear with me for a few minutes while I link these motifs to communication theory. Because I sense that this theoretical grounding will help us in defining what we want in terms of appropriate technologies for women's learning, and why we are for them. Equally, it could help us define what we are against, and why find it inappropriate for meaningful learning. Essentially, the spiral, interconnected motif corresponds to what has been called the social-bonding, communitarian model of communication. It can also be called an ecological model. By contrast, the box-car motif is linked to the transmission model, seeing communication as information transmission and related service transactions.

I'll start with the ecological model. It's something I've partly developed myself, drawing on the comm. theorizing of Robert Babe, James Carey and Harold Innis, and combining this with what I've learned from eco-feminists and also women scientists like Barbara McClintock, Lynn Marguilis, Ursula Franklin and Rosalind Franklin.

First, this model is grounded in nature and nature's ways of communicating. It's grounded in people and other living organisms, and the connections between them. It tends to assume therefore that all living things matter, and that they matter equally. The interconnections are key here: nature's ways of communicating involve an infinite and infinitely alive webwork of communication.

It's suggested in the dancing spirals of the double helix, which Rosalind Franklin discerned through her crystallography work which was so vital to "discovering" DNA. Similarly, the kind of two-way communication between organism and environment which Barbara McClintock identified in her revolutionary theory of jumping genes, and which Lynn Marguilis has enunciated in her revolutionary theories of evolution being grounded in cooperative communication rather than individualized competition.

Extrapolating this into a more social model of communication, this model has the following features:

- communication as extension of the living body, the grounded social relationship and community.
- communication as conversation and culture;
- communication sustaining life, and living institutions, over time;
- it's a growth model of comm. (after Ursula Franklin)
-it foregrounds the social/natural process of communication (over any mechanical means that might augment and enhance it.)
- it lends itself to holistic management, user control & related reciprocity and autonomy;

While the ecological model is an organic model of communication, the transmission model is a mechanical one. It's not that there isn't information transmission in nature, or even in the ecological model of comm. But it's not separated from everything else and scaled up as it is here.

In fact this separation and scale-up are two of the key characteristics of the transmission model:

- It transcends the natural limits of time and space (i.e. scale up plus speed up);
- it disembodies communication from face-to-face communication, and the rhythms associated with the time it takes to tell a story, to make your particular point, etc.
- it foregrounds the mechanical means of communication over the social process;
- it's a prescriptive production model of communication (after Ursula): communication as

commodity transportation or transmission.

- it's also a commercial model of communication. Its content is "information," viewed as commodity.

Understandably, this model has predominated in our commercial industrial society. But democratic values have prompted governments to actively promote the more culture and community-building model by subsidizing it. And so in Canada, we've had a mixed-model approach to communication. In fact, it's been a defining feature of Canadian society . It has given us universality in telephone service. Also, institutions like the National Film Board, the CBC, community-access cable, public education and public libraries and the Internet of the 1970s and '80s.

In recent years, however, the gov't has actively withdrawn from that mixed-model tradition. This can be seen in an amendment to the Telecomm. Act in 1994, shifting the initiative in comm. from public service to market forces, and opening the doors to deregulation and privatization. It can also be seen in the Info. Highway Advisory Council's report -- in its general recommendations that the private sector should create and manage the infrastructure and operating systems of the information society free from public interference -- and also in its particular references to education and learning -- as Jennifer and Linda will spell out in their presentation. Generally too, this retreat can be seen in the cutbacks to public-sector education.

We need to see developments today as involving this polarizing dynamic: the active under-development of the ecological social-bonding model of communication, associated with the public culture and education, as well as the active development of the transmission model of culture and education.

These two models also influence how you define some of the key words in the discussion: And believe me, what we're engaged in here is a major struggle over words, because there are values and values biases at work in how they are defined. And what we are engaged in is a struggle over values.

Take access as an example.

Access: In the transmission model, access is defined as access to the technology: timely, affordable access to the Internet, to phone service etc.

In the ecological, social-bonding model, access is defined with people as the focus: so it's access to meaningful participation. Then, with an equity focus on difference, it is further defined as access to meaningful participation in terms of the participants. Which, in our discussion, would mean not only learners, but women with all our differences in ethnicity, language and ability.

Quality: In the transmission model, quality is defined in technical terms. From getting a dial tone within x seconds, which is how quality is defined in basic telephone service, to lack of noise in transmission, high bandwidth and multi-media capacity.

In the ecological model, however, with its focus on the social process and engaged human relationships of education, we would ask: Is the quality of the personal learning process enhanced. Do people feel as though they're in touch with instructors and fellow learners -- either because they have opportunities to actually be in touch, or because the technologies used to bridge distances between them truly do extend personal communication in all its diversity and need for flexibility?

Sustainability: This is another concept which would be defined differently. Sustainability in the transmission model comes out as sustaining markets for new technologies. In the ecological model, it means sustaining long-term learning goals, sustaining grounded institutions of learning and culture, and sustaining existing skills and knowledge.

This two-part perspective should be central to our analysis of the NLTs and the infrastructures associated with them, helping us decipher what we want and what we don't want.

The transmission model lens can help us critique some of the trends I referred to earlier. For instance, 1), the privatization of public education from within, as global multi-media conglomerates, information and systems providers bid on contracts for everything from distributed learning resources to learning-instructional administration. 2) the move toward a two-tiered education system, with women getting the no-frills digitally delivered, machine-managed stuff. And 3) the exploitation of desperation in selling "skills for the new economy" with no reference to meaningful contexts and opportunities to apply those skills.

Let me end with a short list of what we might consider as an ecological model for using the NLTs. A list which I hope will resonate with the questions which Jennifer and Linda set down at the end of each chapter in their wonderful report.

Ecological Model for using the NLTs

-1) a practitioner's model; not a production/consumption model. Stresses adjusting technology to learners, not adjusting learners to technology.

2) Technology . geared to extending local and personal knowledge, and to building local knowledge bases.

3) learning always linked to life: active connection and continuity with the activity to follow, be that a job or self-employment, suggesting a social responsibility around relevance. 4) is open-ended, holistic;

5) technology supporting person-in-community as well as personal autonomy. This is along the lines of Liz Burge's call for a balance between autonomy and connection.

6) public-sector commitment essential (though this could be defined in ways other than the "industrial" model of centralized bureaucracies.)

And, finally, I have a dream: A dream of CCLOW in its journey away from gov't lobbyist to more active agent itself in policymaking and making things happen. I see CLLOW taking the lead in some of the networking we need to do among educational/learning institutions in developing tech.-assessment tools for women and other users of the NLTs. Perhaps too serving as a broker in creating cooperative joint ventures of praxis around this model of ed., putting it to use, eliciting commitments from various colleges and universities to make it their policy too.

I also see this as part of the kind of national dialogue we need to articulate public policies through which we can preserve a democratic participative culture in this country and resist current moves to destroy it.

In the absence of leadership by the gov't, we are the extra-parliamentary opposition.

Thank you.

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1. Charles Pilier & Liza Weiman, 1992. "America's Computer Ghetto," quoted in Vincent Mosco (1996), The Political Economy of Communication. London: Sage, p. 219.

A Gendered Perspective on Access Issues
by Leslie Regan Shade

Questions/Recommendations

1. Support the development of measures and indicators of information highway participation. Data should be disaggregated and reported based on: income, gender, language, region, ability, ethnicity, age.

2. Encourage access to computer/information literacy and training for all Canadians.

3. Give priority to community-based literacy/training programs, especially those that service marginalized or "have not" populations.

4. Define what technical "core services" should be provided: single party telephone service, access to operator and emergency services, Internet access.

5. Define what information services should be part of the "essential basket" of services provided to the women's community (eg. information on women's health clinics, birth clinics, abortion clinics, counselling, small business services, childcare providers, etc.).

6. Define what information is essential for education, public health, or public safety (eg. adult education centres, women's centres, women's shelters, information for battered women).

7. Determine how more Francophone and non-English content can be created to meet the diverse needs of the women's community in Canada.

8. Determine what public access points would be appropriate for women's use.

9. Design and establish information "safety nets" so that all citizens, regardless of income, can partake of services.

10. Consider whether telecommunications carriers should be required to contribute to a universal access fund and if they should be allotted tax credits for doing so.

11. Consider whether the telecommunications industry should be encouraged to develop a standard "information appliance" to allow low income users to access the Internet.

12. Determine how current federal information infrastructure programs could better support access for women and women's groups.

CCLOW JANUS WORKSHOP
RESOURCE LIST COMPILED BY LIZ BURGE

Balka, E. (1997). Computer Networking: Spinsters on the web. CRIAW.

Faith, K. (Ed). (1988). Toward new horizons for women in distance education: International perspectives. London: Routledge.

Goldberger, N.R., Tarule, J.M., Clinchy, B.M. & Belenky, M.F. (Eds.) (1996). Knowledge, difference, and power: Essays inspired by Women's ways of knowing. New York: Basic Books.

Kirkup, G. (1996). The importance of gender. In Mills, R. & Tait, A. (Eds.) Supporting the learner in open and distance learning. pp. 146-1164. London: Pitman.

Lunneborg, P. (1994). OU women: Undoing educational obstacles. London: Cassell.

MacKeracher, D. (1996). Making sense of adult learning. Toronto: Culture Concepts Inc.

May, S. (1994). Women's experiences as distance learners: Access and technology. Journal of Distance Education, 9(1), 81-98.

Normand, J. (1995). Education of Women in Canada. Canadian Social Trends, 39, 17-21.

Postman, N. (1992). Technology: The surrender of culture to technology. New York: Knopf.

Roberts, J.M. & Keough, E.M. (1995). Why the information highway?: Lessons from open and distance ed. Toronto: Trifolium. (esp. Paquette-Frenette & Larocque chapter)

Spender, D. (1996). Nattering on the Net. Toronto, ON: Garamond Press.

Journal of Distance Education (Canadian)

The American Journal of Distance Education

Burge, E. J. (1994). Learning in computer conferenced contexts: The learner's perspective. Journal of Distance Education, 9(1), 19-43.

Haughey, M. & Anderson, T. (In press). Networking learning: The pedagogy of the internet. Montreal: Cheneliere/McGraw-Hill.

Rice-Lively, M.L. (1994). Wired, warp and woof: An ethnographic study of a networking class. Internet Research, 4(4), 20-35.

Yeoman, E. (1995). "Sam's cafe": A case study of computer conferencing as a medium for

collective journal writing. Canadian Journal of Educational Communication, 24(3), 209-225.

Liz Burge, Judy Roberts. Classrooms with a Difference: Facilitating Learning on the Information Highway 2/e.

Therese Lamy, Judy Roberts. Classes virtuelles: Apprendre sur l'inforoute.

Noël Thomas, Pierre Michaud. Apprendre par la telematique: La pedagogie des reseaux.

Guide to Gender-based Analysis: Status of Women Canada FAX: 613-957-3359

Websites

http:///www.fis.utoronto.ca/research/iprp/ua/gender.html

www.kcc.ca

www.cade-aced.ca (Canadian Association for Distance Education/ Association canadienne de l'education a distance)

www.sunshine.net.sn0430/0470 Sunshine Coast Women's Resources Centre homepage and the links to our Web Women page (teaching, learning)

www.women.ca Canadian Women's Internet Association homepage

http://www.sentex.net/~wred/library.html Women and Rural Economic Development On-Line Library Resource Center

www.equalopportunity:gov.on.ca Ontario Ministry of Citizenship, Culture and Recreation, "Gateway to Diversity"

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World Wide Access:
Accessible Web Design

> Accessible Web page design principles, sometimes called universal access
> design principles, ensure that your World Wide Web pages are accessible to
> all Internet users regardless of the type of hardware, browser software,
> and Internet connection they use.
>
> The World Wide Web has rapidly become the most popular method of using the
> Internet, combining hypermedia and multimedia to provide a huge network of
> educational, governmental and commercial resources. Yet because of the
> multimedia nature of the medium, many Internet surfers are not able to
> access these materials. Some visitors
>
> cannot see graphics because of visual impairments
> cannot hear audio because of hearing impairments
> use slow connections and modems which cannot download large files
> have difficulty when screens are unorganized, inconsistent and cluttered
> and when descriptions and instructions are unclear.

> These difficulties may occur because they have learning disabilities, speak English >
> as a second language, or are younger than the average user,
> use adaptive technology with their computer to access the Web. Most
> adaptive technologies work best with text-based resources.
>
> Universal access design principles ensure that all Internet users can get
> to the information at your Web site regardless of their disability or the
> limitations of their equipment. Keep these guidelines in mind while
> developing your Web pages to ensure that they are accessible to all!
>
> **Accessible Design Principles**
>
> **I. General page design.**
> The Web has mushroomed in popularity because it is such a powerful and
> versatile medium. Much of its power comes from the fact that it presents
> information in a variety of formats while also organizing that information
> through hypertext links. As a result, designing a well organized page is
> essential to helping all visitors navigate through your resources.
>
> **a. Maintain a simple, consistent page layout throughout your site.**
> A consistent design and look makes it easier to navigate through the
> hypertext and find the information you want to provide. For example,
> features presented on every page, such as a standard navigation menu for
> the site, should always appear in the same place. A clear, organized
> presentation will especially assist people with learning disabilities who
> have difficulty working through disorganized, random sites. A carefully
> planned organizational scheme will help everyone use your site.

>
> **b. Keep backgrounds simple. Make sure there is enough contrast.**
> Even people with 20/20 vision can have difficulty reading information at
> sites with busy backgrounds, sometimes called wallpapers. Many backgrounds
> obscure text and make reading more difficult. This is especially true for
> people with low vision or colorblindness as well as for people using black
> and white monitors. Make sure that there is a enough contrast between
> your text and the background of the page. Test your site with both black
> and white and color monitors.
>
> **c. Use standard HTML**
> Use standard tags that all Web browsers can read. Some tags, such as the
> infamous <BLINK>, are not supported by all Web browsers. HTML was
> designed to be a universal format outside the bounds of proprietary
> software and computer languages. Using standard HTML will ensure that
> your content can be accessed by all browsers that visit your site.
>
> **d. Design large buttons.**
> Small buttons providing links can be difficult for visitors with mobility
> impairments using specialized pointer adaptive technologies to use.
> Larger buttons can make it easier for these visitors to select the links
> on your page.
>
> **e. Include a note about accessibility**
> Notify your users that you are concerned about accessibility by including
> a Web access symbol on your page (see Resources list), or a statement like
> the following. Encourage your users to notify you with their
> accessibility concerns.

> The DO-IT pages form a living document and are regularly updated. We
> strive to make them universally accessible. You will notice that we
> minimize the use of graphics and photos, and provide descriptions of them
> when they are included. Video clips are open captioned, providing access
> to users who can't hear the audio. Suggestions for increasing the
> accessibility of these pages are welcome.
>
II. Provide text alternatives to non-text features such as graphics and image maps.

> People who are blind will not be able to view the graphical features of
> your Web site. Many people with visual impairments use voice output
> programs with text-based browsers (such as Lynx) or graphical browsers
> with loading of images turned off. It is imperative that you include text
> alternatives to make these graphical features accessible. Here are
> guidelines for providing alternative text for various types of features.

> **a. Include short ALT Tags for logos and graphics that that are not**
> **critical to the information content of the page.**
> ALT Tags should be short and simple (less than 5 words) as browsers
> sometimes have difficulty with long, run-on ALT Tags.
> The alternative text helps the visitor understand what is on the page if
> they are using a text browser, or if they have image loading turned off in
> their graphical browser.

> The bolded section below shows what an ALT tag looks like HTML:
> **<IMG SRC="./doitlogo.large.gif" ALIGN=MIDDLE ALT="[DO-IT LOGO]">**
> When a sighted visitor views the page, they will see the DO-IT logo. When
> a user who is blind visits, his voice output program will read "DO-IT
> logo" to him. This gives him a clearer idea of what is on the page. In
> addition, any visitor coming to the site using a text-based browser will
> understand that there is a logo there instead of the more ambiguous
> "image" read from the HTML coding referring to images without ALT tags.
>
> **b. Include ALT tags for image maps (also called ISMAPS) to ensure that the**
> **embedded links are accessible.**
> An image map is a picture in which parts of the picture can be clicked on
> to find a link to another page. For example, on a map of the United
> States, a visitor might click on Washington State to find information
> about our state. But if the programmer has not included an ALT tag with
> alternative text, visitors using text-based browsers can be totally
> blocked from the site, or sent on a wild goose chase clicking unlabelled
> links that lead them in circles.

> The following HTML coding does not include an ALT tag for the image map.
> > <HTML>
> <TITLE>Our Library Page</TITLE>
> <BODY>
> <A HREF="/cgi-bin/htimage/home.map">
> <IMG SRC="images/home.jpg" ismap </A>
> </BODY>
> </HTML>
>
> When viewed through a graphical browser, such as Netscape, a beautiful
> picture of a floor map of a library appears in which the visitor can
> choose selected areas of the library. But when a visitor using a
> text-based browser visits the site, this is what they see:
>
> Our Library Page
> [ISMAP]

> At this point the visitor is stuck as most browsers will not interpret the
> hypertext links embedded in the image map. Your visitors only option is
> to back out of the site. A visitor who is blind, or that has older
> technology with a text-based browser cant get to your information.

> The accessibility of image maps is dependent on the web server software
> used at your site. Some recent server programs can pull the link
> information from the image map and present it in a menu format for
> graphical browsers. However, many servers are not yet this sophisticated,
> so always include ALT tags.
>
c. Include descriptive captions for pictures, and transcriptions of manuscript images.
> What information do your pictures and images provide to the viewer?
> Always provide an ALT tag for an image. This is sufficient for logos and
> graphics that that are not critical to the information content of the
> page. But if the graphics provide information beyond this, adding
> captions and transcriptions is important for those who cannot see your
> page either because they are blind, or because they are using a text-based
> browser. If youre not sure how critical a particular image is to the
> content of a page, temporarily remove it and consider its impact.
>
> If you present information in an image format, such as a scanned-in image
> of a page of a manuscript, be sure to also provide a transcription of the
> manuscript in a straight text format. This aids a wide variety of users
> including those with vision impairments, users who speak English as a
> second language, and users with learning disabilities who may have
> difficulty reading the original document.
>
> d. Caption video and transcribe other audio.
> Multi-media and audio formats can be barriers to people with hearing and
> visual impairments as well as for people with less sophisticated
> technology. Provide captioning and transcriptions for materials in these
> mediums so that these visitors to your page have an alternative method of
> accessing this information.
>
> **e. Make links descriptive so that they are understood out of context.**
> Patrons who use screen reading software can adjust their software to read
> only the links on a page. For this reason, links should provide enough
> information when read out-of-context. Never use "click here" as a link,
> or next to an graphic used as a link.
>
> **f. Other options**
> Some organizations caption images by adding a hyperlink immediately before
> or after the image to another page with image descriptions. They suggest
> that the hyperlink text be a simple "D". At the end of the description is
> another hyperlink – "Return". Selecting Return will take you back to the
> image.

> While this is one option, we suggest including the caption as part of the
> page in which the image resides. In the same vein, some have advocated
> the use of alternative text versions of their pages. This adds a great
> deal of maintenance as two versions must be updated, and many people with
> disabilities would prefer to have the original version edited so that it is accessible to them.

> **III. Special Features**
> a. Use tables and frames sparingly, or consider alternatives.
> Most screen reader programs read from left to right, jumbling the meaning
> of information in tables. The adaptive technology will be refined to deal
> with graphical issues such as this, but at this point, look for other ways
> to present the information so that visitors with visual impairments can
> reach your data. In the same vein, frames often present logistical
> nightmares to text-based screen reading software.
>
> **b. Forms and databases**
> Always test forms and databases with a text-based browser. Include an
> e-mail address and other contact information for those who cannot use your
> forms or database.
>
> **d. Applets and plug-ins**
> As the software is developed, applets (such as programs created with JAVA)
> and plug-ins (such as Adobe Acrobat) may provide accessibility features.
> However, currently, many of these programs are not accessible to people
> utilizing text-based browsers. To ensure that people with vision and
> hearing impairments can access your information, provide the content from
> these programs in other, text-based formats.
>
> **IV. Test your Web pages with a variety of browsers.**
> Test your Web page with as many Web browsers as you can, and always test
> your Web page with at least one text-based browser. This way, you will
> see your Web resources from the many perspectives of your users. You may
> want to try out an accessibility validation site which performs a
> diagnostic on your pages and points out parts that could that are
> inaccessible.
>
> **Additional Resources**
> As with all technology, things change regularly in the field of
> accessibility as software and hardware are continually improved. Features
> that were not accessible may become so through the improvements of
> adaptive, browser and server software. However, we can always expect to
> be working with several generations of software and hardware at anyone
> time. Adhering to these principles will ensure that your Web site doesnt
> leave anyone behind.
>
> Here are some sites with more information about accessible Web design.
> DO-IT (Disabilities, Opportunities, Internetworking and Technology) at the
> University of Washington includes a listing of Internet Resources for
> Accessible Web design, as well as other informational resources.
> http://weber.u.washington.edu/~doit

> The National Center for Accessible Media (NCAM) promotes the use of a Web
> Access symbol and provides model examples of accessible pages.
> http://www.boston.com/wgbh/pages/ncam/currentprojects/webaccess.html
>
> Trace Research and Development Center at the University of Wisconsin -
> Madison focuses on research and design "to advance the ability of people
> with disabilities to achieve their life objectives through the use of
> communication, computer and information technologies." They include many
> resources on accessible Web design on their page.
> http://www.trace.wisc.edu/
>
> The Accessible Computer Technology Centre provides a thorough guide to
> accessible Web design.
> http://www.igs.net/~starling/acc/index.htm
>
> Bobby is an easy to use program that will help you make Web pages
> accessible to those with disabilities. It will also find HTML
> compatibility problems that prevent pages from displaying correctly on
> different web browsers. Bobby was created at CAST (Center for Applied
> Special Technology).
> http://www.cast.org/bobby/
>
> DO-IT
> This brochure accompanies an 11 minute video, World Wide Access, which may
> be ordered through DO-IT.
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